REMARKS

In view of the above amendments and the following remarks, favorable reconsideration and allowance of the above application are respectfully sought.

There are now pending in this application Claims 1-4, 7-9, and 20-21, of which Claims 1, 8 and 9 are independent. Claims 10-19 and 22 have been canceled herein without prejudice.

Claims 1, 8 and 9 have been amended. Applicant submits that support for the amendments can be found, for example, at least in Fig. 10 and the corresponding description thereof in the specification. Therefore, Applicant submits that no new matter has been added.

Claims 1-4 and 8-22 were rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 6,275,599 (Adler). Claim 7 was rejected under Section 103 as being unpatentable over Adler considered in view of U.S. Patent No. 6,571,020 (Dumoulin). Applicant respectfully traverses these rejections for the reasons discussed below.

As recited in independent Claim 1, the present invention includes, *inter alia*, the features of lossless-compressing a first bit plane and a second bit plane so that, in a case where the compressed first bit plane and the second bit plane are composited, the amount of composite compressed data is smaller than a data amount of one uncompressed bit plane. The compressed first bit plane and the compressed second bit plane are composited to generate the composite compressed data, and the composite compressed data is substituted for the uncompressed first bit plane of the original image data. Additional information is then substituted for the uncompressed second bit plane of the original image data.

According to the above-mentioned features of Claim 1, the original image can be completely reconstructed, because the data of the original first and second bit planes is wholly contained in the composite compressed data substituted for the original uncompressed first bit plane. At the same time, additional information can be substituted for the original uncompressed second bit plane. As a result, additional information such as a watermark can be inserted into the original image without having any deteriorating effect on reproduction of the original image.

Applicant submits that the cited art fails to disclose or suggest at least the above-mentioned features of Claim 1. Adler discloses a method of solving a problem wherein watermark information embedded in a DCT coefficient before quantization vanishes due to subsequent quantization. More specifically, Adler discloses that an image is first divided into plural blocks, DCT is performed on the blocks, the obtained DCT coefficients are quantized, i) the DCT coefficient before the quantization and ii) copyright information such as owner's name, time and the like are added to a quantization coefficient, and then loss-less compression is performed.

On the other hand, Dumoulin is based on the premise that, in a case where an MR image or the like is displayed on a display, a data set concerning heat and speed can be used in addition to a standard MR image data set. Here, when the image is displayed, such additional information is reproduced by color coding on a gray-scale image. Dumoulin proposes a method of embedding this additional information without increasing data size. More specifically, Dumoulin discloses that bit data of each pixel is bit-shifted leftward, and the additional information is embedded in a free portion made by the bit-shift.

However, neither Adler nor Dumoulin discloses or suggests at least the above-mentioned features of compressing first and second bit planes, compositing the compressed bit planes, substituting the composite compressed data for the uncompressed first bit plane in the original image data, and substituting additional information for the uncompressed second bit plane in the original image data. As a result, neither of those references individually, or their combination, achieves an apparatus that permits embedding of additional information (e.g., a watermark) in an original image while permitting complete restoration of the original image (i.e., without causing any deterioration of the original image data), as the invention having the features of Claim 1 provides.

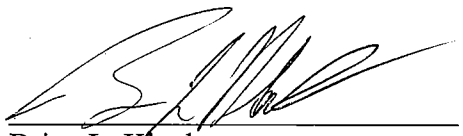
As a result, it is believed that the present invention as recited in independent Claim 1 is patentable over the cited art. Independent Claims 8 and 9 recite features similar to those of Claim 1 discussed above and are believed patentable for reasons similar to Claim 1.

The dependent claims are believed patentable for at least the same reasons as the independent claims, as well as fort he additional features they recite.

In view of the foregoing, Applicant respectfully submits that this application is now in condition for allowance. Favorable reconsideration and early passage to issue are respectfully sought.

Applicant's undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,



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